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AMENDMENTS TO THE CLAIMS:

Please amend claims 9, 13 and 16-19 and cancel claims 1-8, 10-12, 23 and 24 as follows:

Claims 1-8 (canceled)

9. (currently amended) ~~The multicast optimization method in claim 7, wherein the method further includes the step of~~ A multicast optimization method in a cross-VLAN switching device operatively coupled to one or more multicast group members configured in a plurality of VLANs and to one or more nodes via a VLAN-tagged communications link; the method comprising the steps of:

(a) receiving a multicast stream within a first VLAN of the plurality of VLANs;

(b) receiving a multicast declaration message from a plurality of said one or more multicast group members;

(c) registering the one or more multicast group members at the cross-VLAN switching device, each registration constituting a subscription to the multicast stream;

(d) internally distributing the multicast stream toward substantially all the multicast group members registered at the cross-VLAN switching device to receive the multicast stream; and

(e) forwarding only the first multicast declaration message of the plurality of multicast declaration messages upstream towards a root router;

wherein a single copy of the one or more multicast streams propagates across said one or more VLAN-tagged communications links.

Claims 10-12 (canceled).

13. (currently amended) ~~The multicast optimization method in claim 11, wherein the method further comprises the step of~~ A multicast optimization method in a cross-VLAN switching device operatively coupled to one or more multicast group members configured in a plurality of VLANs and to one or more nodes via a VLAN-tagged communications link; the method comprising the steps of:

(a) receiving a multicast stream within a first VLAN of the plurality of VLANs;

(b) registering the one or more multicast group members at the cross-VLAN switching device, each registration constituting a subscription to the multicast stream;

(c) internally distributing the multicast stream toward substantially all the multicast group members registered at the cross-VLAN switching device to receive the multicast stream; wherein a single copy of the one or more multicast streams propagates across said one or more VLAN-tagged communications links;

(d) receiving a leave message from a plurality of the one or more multicast group members to rescind the subscription to the associated multicast stream;

(e) de-registering a multicast group member at the cross-VLAN switching device, each de-registration constituting a rescission of the subscription to an associated multicast stream; and

(f) forwarding only the last leave message of the plurality of leave messages towards an upstream router.

14. (original) The multicast optimization method in claim 13, wherein the last leave message of the plurality of leave messages includes a VLAN identification of the first VLAN.

15. (original) A multicast optimization method in a cross-VLAN switching devices operatively coupled to one or more multicast group members associated with at least one of a plurality of VLANs and to one or more nodes via a VLAN-tagged communications link; the method comprising the steps of:

(a) a registration processing method comprising:

(i) receiving a plurality of multicast declaration messages specifying a first multicast group identification, wherein the multicast declaration messages originate from multicast group members associated with the plurality of VLANs;

(ii) registering each of the plurality of multicast group members from which the multicast declaration messages originated; and

(iii) forwarding only the first multicast declaration message of the plurality of multicast declaration messages to an upstream router;

(b) a multicast stream processing method comprising:

(i) receiving a multicast stream having the first multicast group identification from a multicast group member associated with a first VLAN of the plurality of VLANs;

(ii) switching the multicast stream towards substantially all of the one or more multicast group members, associated with the first VLAN, that are registered to receive the multicast stream; and

(iii) distributing the multicast stream towards substantially all of the one or more multicast group members, associated with the one or more VLANs outside of the first VLAN, that are registered to receive the multicast stream;

wherein the number of duplicate multicast streams that propagate across said one or more VLAN-tagged links is minimal.

16. (currently amended) The multicast optimization method in claim ~~14~~ 15, wherein the step of distributing the multicast stream towards substantially all of the one or more multicast group members comprises the steps of:

routing the multicast stream from the first VLAN to each of the one or more VLANs outside of the first VLAN associated with the one or more multicast group members; and

switching the multicast stream towards from the cross-VLAN switching device to substantially all the one or more multicast group members associated with the one or more VLANs outside of the first VLAN.

17. (currently amended) The multicast optimization method in claim ~~14~~ 15, wherein the method further includes the step of switching substantially all unicast packets from the cross-VLAN switching device to each of the nodes specified in the respective unicast packet.

18. (currently amended) The multicast optimization method in claim ~~14~~ 15, wherein the step of registering each of the plurality of multicast group members further comprises the step of recording multicast subscriptions in one or more VLAN/multicast group membership tables.

19. (currently amended) The multicast optimization method in claim ~~14~~ 15, wherein the method further includes the step of de-registering a first multicast group member of the one or more multicast group members from the cross-VLAN switching device, wherein the subscription to the multicast stream is rescinded.

20. (original) The multicast optimization method in claim 18, wherein the step of de-registering occurs in response to a leave message from a first multicast group member of the one or more multicast group members.

21. (original) The multicast optimization method in claim 19, wherein the leave message is an IGMP Leave message.

22. (original) The multicast optimization method in claim 20, wherein the method further includes the step of forwarding only the last leave message of the plurality leave messages of the one or more multicast group members toward an upstream router.

Claims 23-24 (canceled).